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ABSTRACT

The cumulative, long term impact of alternative kindergarten scheduling for everyday half- and full-day programs was examined for three successive cohorts of children. Dependent measures included academic achievement, school sentiment, personal-social behavior, school attendance, and referral to special education classes. Parent perception of kindergarten programs was also assessed. No achievement differences were observed, although selected noncognitive measures differentiated the two programs. Certain program/grade and program/sex interactions were revealed, as were differences in special class referral rates. Parent perceptions seemed determined primarily by experiences with one or the other scheduling alternative. (Results are discussed in terms of kindergarten theory and practice, academic learning time, and issues of cost analysis and research methodology.) (Author/RH)

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Longitudinal Follow-up Comparison of Conventional and Extended-Day Public School Kindergarten Programs

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Running Head: Longitudinal Follow-up

Abstract

The cumulative, longer-term impact of alternative kindergarten scheduling for everyday half- and full-day programs was examined for three successive cohorts of children. Dependent measures included academic achievement, school sentiment, personal-social behavior, school attendance, and referral to special education classes. Parent perception of kindergarten programs was also assessed. No achievement differences were observed, although selected non-cognitive measures differentiated the two programs. Certain program-grade and program-sex interactions were revealed, as were differences in special class referral rates. Parent perceptions seemed determined primarily by their experience with one or the other scheduling alternative. Results are discussed in terms of kindergarten theory and practice, academic learning time, and issues of cost analysis and research methodology.

Longitudinal Follow-up Comparisons of Conventional and Extended-Day Public School Kindergarten Programs

Introduction

The purpose of this study was to compare the educational progress of three successive cohorts of young children who participated in full- or half-day public school kindergarten programs. This inquiry was initiated in view of several related forces at work in contemporary educational research and practice. Among these forces are strong and persistent beliefs about the significance of early education and its long-term impact (Lazar & Darlington, 1982), a growing literature about time-on-task or academic learning time (ALT) in the school (Bloom, 1978; Borg, 1980), cost analysis variations on the evaluation imperative in public education (Thompson, 1980), and issues about the custodial and socialization functions of schooling (Nyberg & Egan, 1981).

An increasingly studied policy variable in kindergarten practice relevant to those forces is full-day programming with many attendant implications for curriculum development, time and staff utilization, parental support, cost factors, and the like. Perceived benefits of extended-day kindergartens include better preparation of children for first grade, more academic learning time, reduced teacher frustration load, and fewer transportation

difficulties. But these anticipated advantages must be weighed against certain disadvantages such as child fatigue and increased personnel costs (Gorton & Robinson, 1969). Speculation about these pros and cons has gradually given way to empirical research. But unfortunately, the research basis for kindergarten scheduling policy remains weak. To illustrate, the relatively few studies comprising this literature have been dominated by comparisons of full-day, alternating-day kindergarten programs (FDAD) with the conventional, half-day, every-day approach (HDED). Results of these studies are remarkably inconsistent and are limited nearly exclusively to immediate or short-term cognitive-achievement outcomes. Ulrey et al. (1982), for example, found no significant year-end school achievement or behavior differences between matched comparison groups attending HDED and FDAD programs, although parental satisfaction was higher for the extended-day alternative.

Similarly, mixed results about differential scheduling impact characterize the even fewer studies that compare HDED kindergarten to full-day, every-day programs (FDED). Again, immediate-term achievement outcomes have been focal in this small group of studies. Certain of these studies (e.g., Humphrey, 1980) show some reading readiness advantage for extended day programming. Yet, on the whole, little attention has been given

to affective variables and even less to educational growth over the longer term. The net result of kindergarten scheduling research to date is a blurred picture of outcomes. Some studies show slight advantages for conventional scheduling, others emphasize selected advantages of full-day scheduling, and many show no reliable educational advantage either way (Hatcher & Schmidt, 1980; Stinard, 1982).

Consequently, a consistent call is heard for more definitive research to tease out the relative empirical merits of differential kindergarten scheduling. It is argued here that potentially more informative inquiries of kindergarten programming will include the full-day, every-day approach (FDED), with efforts to monitor longer-term consequences as pupils move from kindergarten into the primary grades. This monitoring should encompass both the cognitive and affective domains of educational outcome, with attention also to parental response to scheduling alternatives. Thus, the present study was performed to assess multiple outcomes of contrasting half- and full-day, every-day kindergarten experience (HDED vs. FDED) from a longitudinal perspective.

Procedure

Context for the Study

In contrast to the bulk of alternative kindergarten scheduling studies that have involved rural school districts, the present study was set in a large metropolitan school district in Washington State. Serving a mostly white, middle-class population, this district has experienced a gradually declining enrollment over the past decade, resulting in several school closures and consolidations. One such consolidation involved the establishment of kindergarten-primary (grades K-3) and intermediate (grades 4-6) learning centers within which alternative educational programs are conducted. An alternative practiced since 1980 is a full-day, every-day kindergarten program within one corridor of the school district, inspired also by a belief in the presumed educational advantages of full-day programming--specifically, better preparation for first grade. The kindergarten curriculum is uniform across all district schools, emphasizing pre-academic and general socialization skills. Full-day scheduling has enabled greater variety in activities, including full utilization of enriched-learning resource centers, and enhanced perceptual-motor activities. It also provides more small-group and exploration time for nonacademic learning as well as opportunity for more elaboration

and reinforcement of basic readiness activities. Thus, for the present study, it was hypothesized that increased time, opportunity, and teacher supervision would result in greater general educational benefits for full-day kindergarten children.

Sample and Design

Subjects for the study were 174 first-, second-, and third-grade children of both sexes from two different elementary schools. This socioeconomically homogeneous sample, representing all children available for study from both schools, was differentiated on the primary selection variable of kindergarten history: earlier participation in HDED (N = 87) or FDED (N = 87) programs. Thus, a quasi-experimental (ex post facto) design was created utilizing three successive cohorts of children. Inspection of kindergarten curriculum guidelines and conferences with school personnel resulted in a choice of four dependent measures consistent with the district's overall goals for early education.

First, school achievement was measured by the language, mathematics, and reading subscales of the widely used and technically respected California Achievement Test (CAT). A second measure was the Early Childhood School Sentiment Scale (Evans, 1983), a 32-item self-report scale having a forced-choice pictorial format. This scale measures school sentiment in terms

of positive or negative response to items concerning general school satisfaction, teachers and other adult authority figures, peer orientation, and appeal of school activities. Reliability (internal consistency) based upon the total sample for this study (N = 174) was .92 (corrected). Teachers' ratings of personal-social classroom behavior (Schaefer, 1972) comprised a third measure, with 24 7-point items forming three subscales: task orientation, sociability, and hostility. Reliability (stability coefficients--two-week interval) for these subscales ranged from .72 to .76. Finally, an independent 16-item, 5-point teacher rating scale (Rowell, 1972) was utilized to measure pupil attitude toward reading. Items from this scale are clearly focused upon behavioral indications of attitude and collectivity show an interrater reliability of .88.

Taken together, these four dependent measures provided a multi-method approach to test the naive consensual theory that greater cognitive and affective advantages accrue for children in extended-day kindergarten because of increased instructional, rehearsal, and exploratory time. In addition, a brief (8-item) Likert-type self-report scale to measure parental response to kindergarten scheduling alternatives was developed by the junior author (Marken, 1982). This scale was used to examine any differences in parent sentiment and beliefs about full-day

kindergarten as a function of their children's involvement in alternative programs.

All measures were administered during late spring of 1983, the CAT comprising a routine annual achievement assessment procedure throughout the entire district. Non-academic measures were administered by individual teachers trained in their use, but unaware of the study's purpose. The parental measure was administered via mail survey (N = 180) with a 56% return (N = 101). This total administration procedure yielded data for a comparative multiple outcome assessment of children at points one, two, and three years beyond their kindergarten experience. That is, first-, second-, and third-grade pupils were assessed in relation to their full- or half-day kindergarten experience in 1982, 1981, and 1980, respectively. The full sample represented all children from both kindergarten backgrounds who were available for study at the time of data collection. Stability in basic kindergarten programming across the three-year period was assumed by authentication of uniform curriculum policies, program objectives, and teaching staff in effect for the three-year span. Kindergarten attendance rates were verified from school records to insure that a real difference in school time occurred between the two program groups. And in a further effort to establish an index of social validity for early education (Schweinhart &

Weikart, 1980), first-grade referral rates for special program placement (specific learning disability classes) applicable to all three cohorts were examined.

Data Analysis

Excepting attendance and special education referral rates, all child measures were subjected to analysis of covariance (ANCOVA). Generic cognitive-intellectual ability (Thorndike & Hagen, 1980) measured during each cohort's kindergarten year was the covariate. This procedure provided for proper control of possible ability differences in examining differential program outcomes. In addition to the scheduling difference variable, grade level and sex of subject were included as independent variables for data analysis. CAT data were analyzed in standard, scale score form to establish equivalence for cross-grade comparison; otherwise, raw scores provided the unit of analysis for all child measures. In addition to ANCOVA, multiple correlation analysis was performed on the four main dependent measures to determine extent of relationship between academic and non-academic variables. Parent data were analyzed simply in terms of percentage agreement upon the Likert-type scale items comprising the parent attitude measure. Attendance and special education referral rates were analyzed for proportion and frequency differences (Ferguson, 1981).

Results and Discussion

Results are first discussed for three main categories: program, sex, and grade differences. Data concerning these categories are revealed in tabular form. Table 1 presents mean scores for all dependent measures and Table 2 summarizes the ANCOVA results. For program effects the data show that, excepting reading attitude, no main program differences are revealed by this study. Consequently, if reliability of findings can be assumed, then no strong empirical argument emerges to favor either approach to differential kindergarten scheduling. This finding adds to the murky waters surrounding kindergarten scheduling studies. It is tempting to conclude that, excluding greater actual amounts of highly structured direct academic instruction in kindergarten, a sheer time differential has little to do with subsequent achievement patterns. And even then, the longer-term effects may hold largely for special populations of children (Brown, 1978).

Insert Tables 1 and 2 about here

Of course, even a 100% increase in total school time for FDED kindergarten children does not itself insure substantially more academic learning time. Stated objectives in this instance led

observers to believe that readiness skill acquisition and rehearsal time would, in fact, be consistently higher for FDED children. However, it was important to establish that attendance rates hold similarly across FDED and HDED programs. Examination of attendance rates disclosed that FDED children missed an average of 11.3 days of school across the total academic year while enrolled in kindergarten. This compared to a mean absentee rate of 7.6 days for HDED children, a figure that approximated the total district norm for all grades. The mean absentee rate difference was statistically significant ($t = 3.34$, $p < .05$), but does not bear meaningfully upon the interpretation of overall results from this study. The fact remains that, in terms of total time, FDED children experienced far greater allotted time for school readiness development in kindergarten than did HDED children. Beyond teacher testimonials, nothing firm can be documented for actual engaged time. Hence, the time utilization issue requires much closer examination in future studies.

A notable exception to no program effects--reading attitudes--favors the HDED group and is contrary to prediction. Possibly a full-day schedule involves greater emphasis upon reading readiness activity at the expense of affect. Even so, reading achievement is apparently unaffected, a finding that highlights the long-standing issue about learning and liking (Clifford,

1973).

The erratic pattern revealed by the three significant program X grade interactions is a puzzlement as well. First, FDED children showed lower task orientation ratings at grades 1 and 2, with a reversal occurring for grade 3. Second, extraversion ratings disclosed a similar profile, again with no consistent advantage across the three cohorts. Third, reading attitude ratings showed an advantage for HDED in grades 1 and 2, with no differences by grade 3. Given this somewhat unreliable pattern, little can be said about kindergarten program effects across time insofar as personal-social behavior is concerned. Acknowledging the rebirth of interest in play values (Christie & Johnson, 1983) and the potential for more constructive play activities in full-day kindergarten programs, one might expect some more clear-cut positive effects through time. Validation of this hypothesis awaits further research. Meanwhile, it is likely that the present inconsistent findings reflect idiosyncratic cohort differences and/or response set differences in teachers' pupil rating behavior. But the <u>overall</u> finding of no program differences is more consistent than not with the general trend of related studies (Hatcher & Schmidt, 1980). Exceptions favoring FDED programs are limited nearly exclusively to short-term cognitive effects (Stinard, 1982).

A similar paucity of differences resulted from the male-female comparisons. One main sex difference comes as no surprise--namely, a language achievement advantage for females in all three cohorts. But more revealing are the sex differences that did not occur. Contrary to popular belief and sundry sex difference studies (see, e.g., Block, 1983) comparable levels of reading and mathematics achievement, personal-social behavior, and school attitude were presented by both sexes across all three grade levels. The one exception to this pattern took form in hostility ratings for males in the FDED program, a pattern that held for all three cohorts.

This finding about hostility merits an attempt at explanation. One possibility is that young males have a greater opportunity to learn and practice aggressive behavior in FDED programs and continue to behave thusly in perceptible ways. Or, because of their slower maturational status, males may simply be less well suited developmentally to FDED scheduling, reacting with frustration that generalizes beyond the kindergarten year. This effect, of course, would depend mostly upon what specific variables are at work in a given program. Confirming data cannot be drawn from the preschool intervention literature; hence, more research is needed to explore this dynamic. Whatever the dynamic, hostility ratings from this study seem strongly

implicated in the task orientation ratings as well (see Table 3). As such, both high hostility and low task orientation can be tied indirectly to the school achievement pattern.

Insert Table 3

Tables 1 and 3 also reveal an unexpected finding about grade differences in academic achievement. Cohort two, the second graders, showed a dramatically lower achievement pattern across all subject areas. This pattern held regardless of kindergarten program history, was supported by significantly lower ratings in task orientation, and occurred despite no cognitive ability differences in comparison to other cohorts.

This depressed second-grade performance, or "sabbatical effect," cannot be accounted for conveniently by developmental theory. Neither should it be dismissed solely as a chance event. Rather, three interrelated hypotheses immediately surface. One calls attention to the possibility that the second grade curriculum and the CAT are poorly synchronized in this context. This issue of content validity for the achievement measure requires a careful study of test items in relation to daily lesson sequences. A second and closely related hypothesis concerns continuity of primary grade programming and teaching

style from K-1 into grades two and three. Continuity lacks have been identified as a common problem for the transition from preschool to regular school, especially where preschool programs represent inventive or experimental curricula (Evans, 1975). Such lacks have not been commonly reported in the generic elementary school curriculum literature, however, and are likely to be situational in nature. Finally, the sabbatical effect conceivably could reflect a more specific problem of teacher competence at the second-grade level. This sensitive issue calls for troubleshooting at the local level, to begin with an exploration of any difference between intended and actual program implementation, program instability due to excessive teacher absence because of illness, and so on. Certainly, replication of this study is warranted to explore why the second-grade dip occurs and the extent to which it may be cohort specific.[1] Otherwise, grade effects in this study are inconsequential, save the encouraging trend of steadily increasing positive attitude toward reading as expressed in observable pupil behavior.

Turning to Table 3, it is noteworthy that cognitive ability measured during the kindergarten year shows a consistently positive relationship to subsequent school achievement as well as later measures of school and reading attitude. Such relationships are well documented in the vast literature about

[1] California Achievement Test scores obtained by the cohort (second grade students) a year earlier as first graders were compared to the first grade scores of cohorts one and three (present third and first grade students). No significant differences were observed, thus accentuating the sabbatical effect puzzle.

early screening and prediction, though the magnitude of the correlation is smaller for this sample than that often shown from studies of economically advantaged children (e.g, Barnes, 1982). Also notable are the consistently positive relationships among task orientation, reading attitude, and school achievement. These underscore the importance of attention to business early in the formal school curriculum and, by implication, a plausible causal link between engaged learning time and success in reading.

This plausible link is reinforced by the negative relationships between hostility on the one hand, and achievement and reading attitude on the other. It is possible that for some children, especially males, hostility is a response to the socialization and learning task demands of early schooling, thus establishing affective interference with academic progress. Some children may learn a generalized anger to authority figures prior to school entry, making their adjustment to school all the more difficult. Regardless, children showing high hostility are less likely to find school a comfortable place and, in the extreme, present a poor prognosis for satisfactory educational and social development (Kohn & Rosman, 1973). It is also instructive to note here that the present data contrast with the recent McClinton and Topping (1981) study showing that teachers give higher ratings of school adjustment (first grade) to pupils from

extended day kindergartens than to those from regular kindergartens. Informal follow-up interview data from teachers involved in the present study did support a belief that children from extended-day kindergarten programs surpass their regular program peers in attentional skills and general adjustment to school routines. But, as has been seen, such intangibles were not documented by the more formal assessment procedures.

Perhaps the most surprising finding of this study concerns referral rates for special program placement. Taking all three cohorts together, HDED and FDED programs groups had a referral rate to specific learning disability classes of 14 and 31 children, respectively, most of whom were male. This difference of 17 children is statistically significant ($X^2 = 5.14$, $p. < .05$). To account for this difference, it can be argued (albeit without knowing precedent) that the extended day provides a setting in which more individual learning difficulties may occur or, at least, come to a teacher's attention. More frequent teacher-child interaction may yield richer cues about learning styles and problems. But it is also plausible to argue that the difference emanates from staff philosophy or generalized expectancies, i.e., a more or less conservative stance on the referral issue. For the present context, assignment to special classes is initiated and almost guaranteed by teacher referral.

In one sense, referral--to the extent it triggers careful assessment of a child's possible problems that might otherwise go unexamined--is a positive strategy. But this presumes a valid post-nomination diagnostic strategy to authenticate legitimate candidacy for specific learning disability class placement. Fortunately, the present referral difference finding has contributed to a throughgoing evaluation of the existing referral process to minimize unnecessary special class placement and labeling.

Finally, Table 4 portrays results of the brief parent attitude mail survey. Two samples are presented, one (N = 48) consisting of parents with children in the FDED program, the other (N = 52) consisting of parents whose children participated in FDED scheduling. As equal numbers of parents were surveyed for each group (N = 90, total 180) a 48% and 52% return rate was obtained for HDED and FDED, respectively.

Insert Table 4

Study of Table 4 reveals that a strong majority of parents in both samples believe in the importance and values of kindergarten, but that strong endorsement of FDED is generally limited to parents who have had direct experience with the

extended school day for young children. Irrespective of direct experience, parents apparently believe that full-day kindergarten programs should be justified on educational grounds. Accordingly, they de-emphasized the custodial function of kindergarten, but are somewhat reluctant to shoulder extra costs of full-day scheduling. Despite such reluctance, the generally favorable response from FDED parents is somewhat stronger than that reported in the few studies (e.g., Ulrey et al., 1982) that include parental response to scheduling change. The present data support a tentative inference that parental attitudes about school programs can and do change as a function of their children's direct involvement in them. At least no substantial negative parental sentiment is associated with FDED scheduling in this case. Such data can be useful to school authorities contemplating a change to FDED scheduling, especially if parental resistance is based upon naive theory about possible adverse effects of the extended day (e.g., increased frustration and fatigue levels among children).

To summarize briefly, this study provides no consistent empirical evidence to claim either lasting advantages or disadvantages for alternative kindergarten scheduling according to primary grade cognitive and personal-social follow-up measures. Certain exceptions to this main conclusion appeared,

however, and their educational significance is arguable. These are a more positive reading attitude among HDED primary-grade children, somewhat higher hostility ratings for males with a FDED kindergarten background, and higher referral rates to special learning disability classes among FDED males.

Commentary

Although the foregoing exceptions merit careful examination, the broader finding of no program differences in achievement highlights a basic policy issue: supportive rationale for kindergarten scheduling. Economics come immediately to mind. For example, FDED scheduling normally eliminates the practice of busing two different groups of children daily (both A.M. and P.M. classes). But extended day scheduling simultaneously incurs additional personal expense to maintain an acceptable basic formula for the kindergarten staff-child ratio. In the context of this study, additional staff means one certified teacher specialist (half-time) and one full-time teacher aide who work together with the regular full-time kindergarten teacher. Increased personnel costs have been largely offset by transportation cost savings.

Subsequent to the first three years of FDED programming, the school district initiated a mandatory fee supplement from parents who desire optional full-day kindergarten for their children.

Hence, additional direct costs of the extended day have been further reduced, notwithstanding parental preference for full program subsidy from tax revenue. Cost analysis issues, therefore, are less salient for the school district than for parents who might expect greater educational benefits for their money. Because no definitive educational advantage has been shown for either scheduling alternative, an argument for FDED scheduling must emanate from grounds other than educational advantage or cost-benefit. Parents' convenience regarding custodial arrangement for children, subjective preferences among staff and administration, and some version of a moral imperative (inherent good) surface quickly in this regard.

While such grounds are debated, several challenges to this study's main conclusion of no major differences can be identified, four of which are discussed here. The first challenge is based upon a pervasive concern among educational researchers about measurement validity and breadth of program outcome assessment. One can argue that differences between half- and full-day scheduling exist, but are not captured sufficiently by current measurement techniques. This argument, of course, begs an important question: If a given set of carefully selected measures fails to reveal program differences, what will? Perhaps more attention should be given to the use of specific

criterion-referenced assessments, sign and category observational systems, and various unobtrusive measures (Goodwin & Driscoll, 1980). Any effort to develop increasingly more elaborate and sophisticated measurement strategies to document scheduling differences does, however, sustain a more basic a priori assumption about kindergarten: that extent or type of kindergarten program should be revealed in long-term effects. This assumption is a nemesis for the entire early-childhood intervention enterprise. That is, longer-term gains of early intervention can, but do not necessarily, occur (Ramey, 1982). When benefits do occur, they usually are linked with programmatic variables (e.g., parental involvement) that extend far beyond a simple length of school-day factor (Evans, 1975). The more fundamental issue, however, concerns the role and function of kindergarten in the K-12 education framework--an issue that persists unresolved after over a century of debate (Cohen & Rudolph, 1977).

This point leads to a second and related challenge to the finding of no differences--namely, that the potential power of full-day scheduling is not always expressed in a given setting. Amount, kind, and implementation adequacy of program activities are relevant variables here. Process evaluation is required to monitor and authenticate these variables (Leinhardt, 1980). The

present post hoc design obviously did not accommodate program process or implementation evaluation. Thus, it is possible that FDED program variables to establish longer-term impact were inadequately exploited. If so, exploitation failure was consistent across all three cohorts; none showed any distinctive pattern to contradict the no-difference conclusion. Seemingly, the extended-day program was well in place. Cohort 1 (third graders) began kindergarten in 1979, the first year that alternative scheduling policy became operational. Cohorts 2 and 3 (second and first graders) thereafter experienced the same intended school program as conducted by the same experienced staff. Perhaps future kindergarten research should routinely incorporate process evaluation to determine the extent to which a program reliably occurs as intended. Unfortunately, many practical constraints inhibit comprehensive process evaluation, dependent as it is on extended classroom observation. Short of an observation approach, researchers may resort to interview techniques described elsewhere in the literature (e.g., Hall & Loucks, 1977).

A third challenge to the present study also stems from methodological concerns, namely that any appropriate test of program alternatives must include a true control group (no program). Field researchers will agree that this ideal design

feature is rarely feasible in studies of the present sort where program participation is a community tradition or is even required by law. In short, adherence to the stringent experimental conditions for laboratory study is unrealistic in most field settings, thus indicating a need for quasi-experimental research design (Cook & Campbell, 1979). In the spirit of such design, a "conventional treatment group" (herein the HDED group) actually serves the function of a standard control group for comparison purposes.

A final challenge to be discussed here concerns the generalizability of the present findings. Most obviously, any generalization of results is restricted by the socioeconomic context of this study and the specific kindergarten curriculum and teachers involved. Teacher effects (or their lack) cannot be parcelled out for this study. However, the cross-sectional sampling does provide a means for replicating whatever teacher effects occurred. Again, this is because the same teachers were involved for all three cohorts of HDED and FDED children. Irrespective of the teacher variable, a more intriguing external validity issue concerns the socioeconomic factor. Extrapolating from the vast study of socioeconomic differences in children's educational progress (e.g., Deutsch, 1973), one can hypothesize that middle-class children may be less measurably affected by

scheduling variations in formal schooling than are lower-class children. This is because the "hidden curriculum" of homes for more economically advantaged children is apparently more often in tune with the demands of schooling. Thus, lower-class children would be more likely to profit from extended time in school, during which compensatory education occurs. In short, FDED scheduling may be more or less educationally significant, depending upon the populations to be served. Such thinking is consistent with the general rationale for larger educational reform movements, including Project Head Start (Zigler & Valentine, 1979). Unfortunately, the bulk of research on this point has involved preschool and special follow-through programs largely confined to economically disadvantaged children. Kindergarten research per se is not strong on this point of differential impact mediated by social class differences. In fact, one of the few studies available reveals a greater advantage of FDED scheduling for upper- than for middle-class children (Lysiak & Evans, 1976).

Clearly, more attention to demographic and ecological variables is called for in future studies of kindergarten programming. Meanwhile, educational decision makers are well advised to examine scheduling alternatives with a sharp, critical eye. Until more convincing educational advantages are shown for

one or another scheduling policy, it seems most prudent to limit the extended-day rationale to pragmatic considerations.

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Table 1

Mean Scores from Four Dependent Measures of Primary Grade Children with Half-Day, Every-Day (HDED) or Full-Day, Every-Day (FDED) Kindergarten Histories[a]

	California Achievement Test[b]			Personal-Social Behavior[c]			School Sentiment	Reading Attitude
	R	L	M	TO	E	H		
Program								
FDED (N=87)	397.22	402.15	391.95	4.90	5.08	1.67	26.20	56.75
HDED (N=87)	403.46	397.60	390.15	4.87	4.96	1.93	26.40	62.16
Sex								
M (N=88)	399.68	390.36	388.22	4.72	5.07	1.76	26.02	58.83
F (N=86)	401.01	409.60	393.95	5.04	4.97	1.85	26.58	60.09

Continued .....

Table 1 (Continued)

	California Achievement Test[b]			Personal-Social Behavior[c]			School Sentiment	Reading Attitude
	R	L	M	TO	E	H		
Grade								
First (N=59)	433.58	356.64	450.37	5.04	5.03	1.72	26.69	57.02
Second (N=59)	352.24	385.49	339.15	5.49	5.06	1.81	25.71	59.56
Third (N=56)	416.00	460.57	383.23	5.03	4.97	1.90	26.50	61.91

[a]Standard deviations are available upon request from the senior author. [b]Symbols refer to Reading, Language, and Mathematics Sub-Tests, respectively. [c]Symbols refer to Task Orientation, Extraversion, and Hostility, respectively. For TO and E, high scores indicated more of the characteristic. H has the reverse scoring, i.e., the lower the score the stronger the hostility rating.

Table 2

Summary of Significant Findings from Four Dependent Measures of Primary Grade Children with Half-Day, Every-Day (HDED) or Full-day, Every-Day (FDED) Kindergarten Histories (ANCOVA)

	F-Values for Group and Interaction Effects[a]				
	Program	Sex	Grade	Program X Sex	Program X Grade
CAT					
Reading			62.36		
Language		5.26	55.53		
Mathematics			77.24		
Personal-Social Behavior					
Task Orientation			3.34		12.47
Extraversion					5.81
Hostility				3.31	
School Sentiment					
Reading Attitude	12.75		5.01		5.03

[a]Since none of the Sex x Grade or Program x Sex x Grade interactions was significant, these two categories are excluded from Table 2. Only F-values that indicate statistical significance ($p < .05$ or beyond) are shown.

Table 3

Correlations Among Variables from a Study of Primary Grade Children with Differential Kindergarten Histories (N=174)[a]

	Measure							
	Cognitive Ability (CA)	California Achievement Test[b]			Personal-Social Behavior[c]			School Sentiment (SS)	Reading Attitude (RA)
	CA	R	L	M	TO	E	H	SS	RA
CA	--	.37**	.34**	.38*	.13			.14*	.22**
R		--	.46**	.66**	.28*		-.13		.17*
L			--		.24**				.36**
M				--	.21*		-.15		
TO					--	.34**	-.40**		.46**
E						--			.34**
H							--		-.15
SS								--	
RA									--

Continued.....

Table 3 (Continued)

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[a]Correlations are Pearson-type with only statistically significant correlations reported ($p < .05$ or beyond). One asterisk * signifies $p < .01$; two asterisks ** signify $p < .001$. [b]The symbols R, L, and M denote reading, language, and mathjematics, respectively. [c]The symbols TO, E, and H denote task orientation; extraversion, and hostility, respectively.

Table 4

Results of a Comparative Survey of Parent Attitudes about Half- and Full-Day Kindergarten Programs in a Large Metropolitan School District[a]

Item	Parent Group	Percentage Response Distribution[b]				
	Half Day Every Day (N=48) / Full Day Every Day (N-52)	Response Category[c]				
		SA	A	U	D	SD
1. Kindergarten programs are a very important part of the public school system.	HDED	70	23	00	02	05
	FDED	66	32	02	00	00
2. Kindergarten programs should be all day rather than half day.	HDED	05	23	18	31	23
	FDED	39	45	14	02	00
3. Full-day kindergartens should serve as a kindergarten program half day and a day care program half day.	HDED	02	02	10	46	40
	FDED	02	02	14	30	52

Continued .....

Table 4 (Continued)

Item	Parent Group Half Day Every Day (N=48) Full Day Every Day (N-52)	Percentage Response Distribution[b] Response Category[c] SA	A	U	D	SD
4. Full-day kindergarten programs should be offered for educational reasons rather than serving as a kindergarten program half day and a day care program half day.	HDED	42	37	02	11	08
	FDED	67	25	02	06	00
5. Full-day kindergarten programs are better for developing the academic readiness skills of students than are half-day programs.	HDED	02	27	29	32	10
	FDED	52	32	11	05	00

Continued.....

Table 4 (Continued)

Item	Parent Group	Percentage Response Distribution[b]				
	Half Day Every Day (N=48)	Response Category[c]				
	Full Day Every Day (N-52)	SA	A	U	D	SD
6. Full-day kindergarten programs do a better job of developing student self-confidence than do half-day programs. offered.	HDED	05	15	28	37	15
	FDED	42	33	21	04	00
7. More parents would enroll their child in the public school kindergarten program if full-day kindergarten programs were offered.	HDED	05	30	33	25	07
	FDED	28	40	23	07	02

Continued .....

Table 4 (Continued)

Item	Parent Group	Percentage Response Distribution[b] Response Category[c]				
	Half Day Every Day (N=48) / Full Day Every Day (N-52)	SA	A	U	D	SD
8.Parents would be willing to pay approximately $2.50 per day in tuition to have their child enrolled in a full-day kindergarten program.	HDED	10	13	32	18	27
	FDED	05	25	20	32	18

[a]All data are reported as percentage of total numbr of subjects responding. [b]Statistically significant percentage differences are represented by any difference greater than 20 percentage points based upon calculations of the difference between two independent proportions (Ferguson, 1981). [c]Symbols signify strongly agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD).